

REMARKS

Claims 1, 2, 4, 16, and 17 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by U.S. Patent No. 6,433,541 to Lehman et al. ("Lehman"). Claims 3 and 5 stand rejected under 35 U.S.C. as allegedly being unpatentable over Lehman. Claims 18-20 stand objected to as being dependent upon a rejected base claim.

I. Allowable Subject Matter

Applicant thanks the Examiner for the indication of allowability of claims 18-20. Applicant has amended claims 18 and 20 and believes that claims 18-20 are now in condition for allowance.

II. The Rejections under 35 U.S.C. 102(e) and 103

Claim 1

Claim 1 is patentable over Lehman because Lehman neither teaches nor suggest "circuitry in the platen to combine the first signal from the eddy current monitoring system and second signal from the optical monitoring system into a third signal on an output line," as recited in claim 1.

Applicant has amended claim 1 to reiterate that the first signal is from the eddy current monitoring system and the second signal is from the optical monitoring system.

The office action alleges that Lehman teaches this feature of claim 1 in column 6, lines 7-21. However, Lehman does not so teach. Rather than teaching combining a first signal from an eddy current monitoring system and a second signal from an optical monitoring system, the cited portion of Lehman teaches that signals from eddy current sense and drive coils 202a and

202b may be combined (see also FIG. 2 of Lehman). Thus, Lehman merely teaches combining signals generated by the eddy current monitoring system rather than combining a signal from the eddy current monitoring system and a signal from the optical monitoring system, as recited in claim 1.

Claims 2-5

Claims 2-5 depend from claim 1 and are therefore patentable for at least the same reasons as stated above with respect to claim 1.

Claim 16

Claim 16 is patentable over Lehman because Lehman neither teaches nor suggests “a computer configured to calculate a correction factor based on the strength of the magnetic field and calculate a thickness of the conductive layer from the phase difference and the correction factor,” as recited in claim 16.

In contrast, Lehman teaches that “In general terms, phase and magnitude measurements for the sample under test, sample carrier, and free space are obtained. The measurements of the sample carrier and/or free space (or open coil) are used to compensate for gain and phase errors within the measurements of the sample’s film thickness.” (Please see column 8, lines 26 to 28 of Lehman, emphasis added). Thus, any correction factor is based on measurements of the sample carrier and/or free space measurements rather than measurements based on the sample under test. Thus, Lehman cannot be said to teach calculating a correction factor based on the strength of the magnetic field obtained when eddy currents are generated in a conductive layer on a substrate (which would correspond to the sample under test of Lehman), as recited in claim 16.

Claim 17

Claim 17 is patentable over Lehman because Lehman neither teaches nor suggests “an eddy current monitoring system to generate a first signal during polishing, the eddy current monitoring system including a coil wrapped around a core to generate a magnetic field that extends to a first region of the substrate; an optical monitoring system positioned to generate a second signal during polishing, the optical monitoring system including a light source, the light source positioned and oriented to direct a light beam to a spot in the first region of the substrate so that the eddy current monitoring system and optical monitoring system measure substantially the same location on the substrate,” as recited in claim 17.

The office action fails to point to any teaching or suggestion of these features in Lehman. Further, Applicant fails to see any teaching of these features in Lehman. Rather than teaching that the eddy current monitoring system and optical monitoring system measure substantially the same location on the substrate, Lehman teaches that “Preferably, the optical measurement device is positioned separately within the platen from the eddy probe system.” (Please see column 13, lines 12-14 of Lehman; please see also FIG. 5 of Lehman). Although Lehman teaches that “the eddy probe coils may be wrapped around the optical element,” (please see column 13, lines 11-12 of Lehman), there is no suggestion to modify Lehman so that the coil is wrapped around a core and at the same time the eddy current monitoring system and optical monitoring system measure substantially the same location on the substrate, as recited in claim 17.

III. New Claims 21 and 22

Applicant has added new claims 21 and 22 to emphasize additional features of the current disclosure. New claims 21 and 22 are supported in the specification at, for example, page 14 line

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8 to page 15, line 10. New claims 21 and 22 depend from claim 16 and are therefore patentable
for at least the reasons set forth above with respect to claim 16.